What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. In a single-shot laser rangefinder having a photo-detector for detecting return laser pulse signals, and a range processor for determining the range of a reflecting object from the round trip time of flight of the return laser pulse signals, the difference in time at which the strongest laser pulse signal crosses the threshold for detection and the weakest laser pulse signal crosses the threshold for detection causing a timing error in the measured range,

range accuracy compensation means connected between the photo-detector and the range processor for determining within a certain error band the amplitude of a return laser pulse and for using the amplitude information to add a corrective factor to the measured range.

2. The rangefinder recited in claim 1 wherein the range accuracy compensation means is connected to the photo-detector by way of a signal amplifier.

3. The rangefinder recited in claim 1 wherein the range accuracy compensation means includes:

a plurality of comparators whose inputs are connected to the photo-detector to provide threshold detection of multiple voltage levels arising at the photo-detector.

4. The rangefinder recited in claim 3 wherein each comparator outputs a digital level signal in response to an analog input signal that is more than a threshold set therein at the negative input terminal of the comparator.

5. The rangefinder recited in claim 4 wherein the range accuracy compensation means includes:

a plurality of latches, each latch connected to a respective comparator, the comparator outputs being fetched to the clock inputs of the latches so that when the digital level signal presents itself at the clock input, the latch then latches to the digital level signal.

6. The rangefinder recited in claim 5 wherein the range accuracy compensation means includes:

a microcontroller having a plurality of inputs, each input connected to a respective latch for reading the outputs from the latches.

7. The rangefinder recited in claim 6 wherein the microcontroller has a store containing a plurality of pre-set correction factors corresponding to the range errors for various pulse amplitudes.

8. The rangefinder recited in claim 7 wherein the microcontroller has an output connected to the range processor, and the microcontroller outputs the compensated range to the range processor upon decoding the output signals of the latches.

9. In a single-shot laser rangefinder having a photo-detector for detecting return laser pulse signals, a signal amplifier for amplifying the return laser pulse signals, and a range processor for determining the range of a reflecting object from the round trip time of flight of the return laser pulse signals, the difference in time at which the strongest laser pulse signal crosses the threshold for detection and the weakest laser pulse signal crosses the threshold for detection causing a timing error in the measured range,

a plurality of comparators whose inputs are connected to the signal amplifier to provide threshold detection of multiple voltage levels arising at the photo-detector, each comparator outputting a digital level signal in reference to an analog input signal that is more than a threshold set therein at the negative input terminal of the comparator;

a plurality of latches, each latch connected to a respective comparator, the comparator outputs being fetched to the clock inputs of the latches so that when the digital level signal presents itself at the clock input, the latch then latches to the digital level signal; and

a microcontroller having a plurality of inputs, each input connected to a respective latch for reading the outputs from the latches, the microcontroller having a store containing a plurality of pre-set correction factors corresponding to the range errors for various pulse amplitudes, the microcontroller having an output connected to the range processor for outputting the compensated range to the range processor upon decoding the output signals of the latches.

10. A method of compensating for range accuracy comprising the steps of:

(a) receiving return laser pulse signals;

(b) determining the range of a reflecting object from the round trip time of flight of the return laser pulse signals, the difference in time at which the strongest laser pulse signal crosses the threshold for detection and the weakest laser pulse signal crosses the threshold for detection causing a timing error in the measured range;

(c) determining within a certain error band the amplitude of a return laser pulse ; and

(d) using the amplitude information to add a corrective factor to the measured range.

11. The method recited in claim 10 wherein step (a) includes:

photo-detecting return laser pulse signals.

12. The method recited in claim 11 wherein step (a) includes:

amplifying the return laser signals.

13. The method recited in claim 10 wherein step (b) includes:

processing the amplified return signals in a range processor.

14. The method recited in claim 10 wherein step (c) includes:

feeding the return laser pulse signals to a plurality of comparators, each comparator outputting a digital level signal in response to an analog input signal that is more than a threshold set therein at the negative input terminal of the comparator..

15. The method recited in claim 14 wherein step (c) includes:

fetching the comparator outputs to the clock inputs of a plurality of latches so that when the digital level signal is presented at the clock input, the latch latches to the digital level signal.

16. The method recited in claim 15 wherein step (d) includes:

reading the outputs from the latches into a microcontroller having a store containing a plurality of pre-set correction factors corresponding to the range errors for various pulse amplitudes.

17. The method recited in claim 16 wherein step (d) includes:

decoding the output signals of the latches.

18. The method recited in claim 17 wherein step (d) includes:

outputting the compensated range to the range processor.